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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,846	12/18/2001	Toshiaki Yoshihara	1100.66059	1826

7590

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EXAMINER

LEE, PATRICK J

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,846

Applicant(s)

YOSHIHARA ET AL.

Examiner

Patrick J. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the frame number changing unit with the rest of the device. Based on the claims alone, it is unclear how the frame number changing unit affects the operation of the other elements of the device, such as the light switching element, control unit, and the light emission-switching unit. While claim 4 teaches that a temperature detector is used in the changing of the frame number, it is not disclosed how the frame number is involved in the operation of the device. It could be possible that the frame number changing unit could be omitted without affecting the operation of the device adversely. As a result, dependent claims 2-17 are also rejected.

3. Claims 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: changing the number of frames with the rest of the method. Based on the claims alone, it is unclear how the step of changing the frame number affects the control of the intensity and the synchronization

of the signals. While claim 20 teaches that a temperature detector is serves a function in the change of the frame number, it is not disclosed how the frame number is involved in the operation of the device. It could be possible that the step of changing the frame number could be omitted without affecting the operation of the device adversely.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5 & 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanai et al 5,737,036.

With respect to claims 1 & 18, Kanai et al disclose:

a display apparatus in which a field sequential signal generator (1) takes input image data split into primary colors;

a switching device (9) as a light emission switching unit, which reads the primary color signals and outputs a signal (M) representative of the field sequential signal generator (1);

a monochrome image display apparatus (4) or a cathode ray tube (CRT) as a light source, that reads the signal (M) and outputs a respective optical signal;

a coloring apparatus (5) as a portion of the light switching element that colors the picture from the monochrome image display apparatus (4);

and a control unit (3), which sends a signal CS to control the coloring apparatus (5) and sends signals (HS and VS) to monochrome image display apparatus (4) to control the timing (see abstract & column 15, lines 28-51).

Kanai et al do not specifically disclose a frame changing unit. However, such is known and would have been obvious, as doing so would allow for improved performance in terms of scanning and outputting an image of the highest quality. In addition, the claims as stated do not disclose how the claimed invention would operate without the frame-changing unit, as it would be theoretically possible that without the frame-changing unit, the device would still perform.

With respect to claim 2-3 & 19, Kanai et al do not explicitly disclose a discrimination circuit and the increase of the frame rate for moving image data, but such is known and would have been obvious as the moving image data would require increased signaling to account for the changes in the image due to it showing motion.

To provide an accurate moving picture, it would be advantageous to be updating the optical output more frequently in comparison to a still picture.

With respect to claim 4-5 & 20, the use of a temperature detector and the increase of the frame number for a temperature that exceeds a threshold are known and would have been obvious as modifying Kanai et al accordingly would allow for improved performance of the device and prevent the higher temperature from detracting the performance of the light source.

7. Claims 6-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanai et al 5,737,036 in view of Ferguson 5,717,422.

Kanai et al disclose the system as described in the discussion of claims 1-4 and 18-20. However, Kanai et al do not disclose the coloring apparatus (5) as being of a liquid crystal display type. Ferguson teaches a display device with a liquid crystal display (3) that receives light from light source (2). Computer control (5) affects the intensity of the light source (2) and modulates liquid crystal display (3) when in a field sequential mode (see column 2, lines 11-16). It would have been obvious to modify Kanai et al in view of Ferguson to improve the contrast of the device and improve the image outputted by the display.

With respect to claims 6-8, Ferguson states the use of a liquid crystal display (3).

With respect to claims 9-11, while Ferguson does not explicitly teach the use of a liquid crystal display with spontaneous polarization, such is known and would have been obvious as they are known for their ability to provide high resolution of images while

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being able to account for the changes in frame number. See column 7, lines 25-43 and column 8, lines 5-15.

With respect to claims 12-17, Fergason teaches that the liquid crystal layer (13) consists of liquid crystals cells (3').

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Buzak 4,611,899 teaches a field sequential liquid crystal display.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (703) 305-3871. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9558 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

PJL

March 7, 2003

Patrick J. Lee
Examiner
Art Unit 2878



DAVID PORTA

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